



General

Guideline Title

Safe administration of systemic cancer therapy. Part 2: administration of chemotherapy and management of preventable adverse events.

Bibliographic Source(s)

Leung M, Bland R, Baldassarre F, Green E, Kaizer L, Hertz S, Craven J, Trudeau M, Boudreau A, Cheung M, Singh S, Kukreti V, Raha R, Safe Administration of Chemotherapy Expert Panel. Safe administration of systemic cancer therapy. Part 2: administration of chemotherapy and management of preventable adverse events. Toronto (ON): Cancer Care Ontario (CCO); 2014 Mar 10. 82 p. (Evidence-based series; no. 12-12-2). [95 references]

Guideline Status

This is the current release of the guideline.

The EVIDENCE-BASED SERIES report, initially the full original Guideline, over time will expand to contain new information emerging from reviewing and updating activities.

Please visit the [Cancer Care Ontario Web site](#) for details on any new evidence that has emerged and implications to the guidelines.

Recommendations

Major Recommendations

Areas of Interest and Summary Recommendations

To optimize the level of professional practice to ensure the safety of chemotherapy administration, it is recommended that:

- Institutions develop, implement and monitor specific policies and procedures for the safe administration of chemotherapy
- The development of policies and procedures be considered as a quality indicator (step 1) and the subsequent impact of these policies and procedures on patient-relevant outcomes be assessed (step 2)

Education and Competencies

The Working Group recommends that organizations have policies and procedures in place that address:

- Roles and responsibilities of health professionals participating in the care of persons with cancer who are receiving chemotherapy
- Education and skill development of professionals to establish competence in caring for persons receiving chemotherapy and in operating any

equipment required to provide this care

- An ongoing and sustained competency program for all professionals caring for persons receiving chemotherapy that regularly (i.e., annually) evaluates maintenance of competency and adherence to policies and procedures
- Education of health professionals specifically regarding the prevention, management and reporting of side effects and adverse events
- Standards for all major processes involved in the prescribing, dispensing and administration of chemotherapy. For example: how chemotherapy is prescribed, the use of standardized chemotherapy protocols (with supporting references and documentation when there are protocol deviations), a process for order verification and independent double-checking, chemotherapy preparation and dispensing, pre-treatment assessment, catheter selection, maintenance and removal, monitoring, patient education and discharge documentation
- Proper dose of chemotherapy (not routinely capped for larger patients)
- Proper dose adjustment of chemotherapy based on adverse events and conditions (e.g., febrile neutropenia, neurotoxicity, nephrotoxicity)
- Safe labeling, and the timing and scheduling of chemotherapy drugs
- Prevention, early detection and management of complications related to the catheter/device use and to the drug administered
- Safe handling of hazardous drugs, including drug preparation, equipment for personal protection, drug administration, chemotherapy spill management and waste disposal, that meets provincial and national occupational health and safety standards
- Education and promotion of self-management in persons receiving chemotherapy (e.g., on prevention, management and reporting of side effects and adverse events)

Area of Interest 1: Selection, Use and Management of Vascular Access Devices (VAD), Including Potential Complications, During the Administration of Systemic Cancer Treatment

Selection and Management of Peripheral and Central Venous Access Devices and Intra-peritoneal Catheters

- Treatment factors are the primary consideration in the selection of an access device, as they may dictate the need for a particular device or class of devices. Clinical factors, patient informed decision making and resource concerns may further direct or guide selection.
- The access to expertise or device availability should not be a barrier for the patient to receive the most appropriate device. For specific procedures such as the insertion of a port, network connections with other institutions should be in place so that the patient can receive the service if an institution does not have the expertise available.

Prevention and Detection of Complications

As a general, overarching recommendation on catheter-related complications, the Working Group advocates institutions where VADs are inserted or maintained:

- Promote a culture of safety, commit to best practice, patient-centered and standardized care, and provide education and resources to health care providers, patients and their caregivers.
- Implement continuous monitoring and evaluation of the quality of provider performance and their adherence to organizational policy, procedures and relevant guidelines.
- Have surveillance programs in place to monitor for device-related complications and conduct systematic error analyses on incident events.

The recommendations made in this document can assist health professionals to work with their organization and address gaps in policies and procedures. Institutions should facilitate this collaborative work.

In selecting, inserting and managing a VAD, health professionals should make their decisions with consideration of the multiple factors that may contribute to catheter-related complications.

The Working Group recommends that:

- Institutions have "care bundles" and standardized protocols at each point of care for preventing, diagnosing and treating infections, occlusions and thrombosis secondary to access devices. Specific instructions should be available for special populations such as patients who are immunosuppressed.

For the prevention and early detection of infection, occlusion and thrombosis, the Working Group recommends:

- Health professionals should be mindful of the catheter-related factors that may place patients with an access device at risk for catheter-related infection, catheter occlusion or thrombosis.
- Health professionals should monitor for the appearance of signs and symptoms of local and systemic catheter-related infections on insertion, and during infusion and maintenance of the access device.
- Health professionals should monitor for early signs and symptoms of access device-related partial or total occlusion as well as for signs and

symptoms of venous thrombosis at all points of care.

Area of Interest 2: Extravasation, Phlebitis, Flare, Allergy and Hypersensitivity Complications of Chemotherapy Administration

For the prevention of extravasation, phlebitis, infiltration, hypersensitivity, flare and allergic reactions, the Working Group recommends:

- Health professionals be mindful of factors that can put patients at increased risk of extravasation, phlebitis, infiltration, flare, hypersensitivity reactions and allergic reactions. They should follow standardized procedures, including the use of checklists, for the administration of cancer systemic treatment.
- Patients should be involved in the treatment process (see the National Guideline Clearinghouse (NGC) summary of the Program in Evidence-based Care (PEBC) guideline [Safe administration of systemic cancer therapy. Part 1: safety during chemotherapy ordering, transcribing, dispensing, and patient identification](#)) and should be educated about the risk of vesicant extravasation and actions that they can take during the administration, in managing their care after administration, or after extravasation has been identified.
- Health professionals working in chemotherapy administration settings should be specifically trained for these complications and, in collaboration with the patient should monitor for early signs and symptoms of extravasation, phlebitis, infiltration, flare reaction, hypersensitivity and allergic reactions.
- At the point of care of insertion of VADs, it is important that careful attention be paid to ensure optimal vein selection. In cases of failure of a first attempt to cannulation, it is recommended that the second insertion should be made above (closer to the heart) the original site. It is best to avoid administering cancer drugs below a previous venipuncture site.
- Institutional policies and procedures may contain a complete description of other precautions that need to be taken when starting and when monitoring intravenous (IV) treatment including standardized procedures for managing hypersensitivity reactions, allergic reactions, and extravasation

Area of Interest 3: Nursing Practices Before, During and Immediately After the Administration of Systemic Cancer Treatment, Including Verification and Maintenance of the Treatment Plan

Administration with Volumetric and Elastomeric Pumps, Including the Importance of Independent Checking of Calculations

- For elastomeric pumps, staff and patient education is required to ensure pumps are infusing at a rate as close to the nominal rate as possible. This includes:
 - User-specific education materials for pharmacy staff, nurses and patients
 - Ordering physician's awareness of the strengths and weaknesses of the technology, and of the importance of proper preparation and use
 - Instructions on how to identify a pump failure, and appropriate interventions in case of failure
 - Collaboration with the vendors to improve educational materials
- Administration of chemotherapy via volumetric or elastomeric pumps should only be performed by registered nurses trained and certified in their use
- There are physical and operational differences between volumetric pumps. The number of different brands or models of pumps in one institution should be minimized to reduce the risk for incorrect use or programming
- Pumps in a hospital should all be programmed using the same units that are included in the labeling of chemotherapy
- Refer to Cancer Care Ontario (CCO) guidelines for appropriate labeling of chemotherapy products.
- Pump programming should be independently checked by two RNs with the appropriate training for the particular brand and model of volumetric pump
- Prior to chemotherapy administration, a final check of patient and drug information should be performed independently by two registered nurses (RNs) with the appropriate training and skills
- Administer continuous cytotoxic therapy via a central venous access device
- Only luer-lock fittings should be used with administration sets
- Devices should be checked for leakage or contamination prior to use and throughout the infusion period. If the infusion is occurring at home, the patient should be educated on periodically performing this check
- Where patients are receiving the infusion at home, they must be supplied with a spill kit and be educated on how to recognize and manage a spill
- Unused or remaining cytotoxic drug and its devices should be returned to the chemo suite for disposal
- Cytotoxic precautions (i.e., prevention of contact with cytotoxic drugs or bodily fluids of patients who received such drugs) should be taken according to the recommendations in the NGC summary of the PEBC Evidence-based Series (EBS) report [Safe handling of cytotoxics](#).

The Working Group recommends that healthcare practitioners:

- Document systemic treatment administration, including calculations and any relevant safety issues encountered in appropriate records
- Document any issues/concerns identified by the patient or his or her family, and subsequent interventions, including the response to these interventions
- Document any education provided to the patient and her or his family
- In case of errors, document the plan of care and expected outcomes

Before the administration of the drug, the Working Group recommends:

- Healthcare providers should follow organizational protocols and procedures for patient identification, administration of pre-medications, and patient education
- During the preparation and administration of systemic cancer treatment, multitasking should be avoided

For post-care, the Working Group recommends:

- Patients who are going to be sent home with an ambulatory pump should be observed until the proper functioning of the pump can be verified, and possible allergic or hypersensitivity reactions can be excluded
- Protocols and procedures are to be followed for the safe handling and disposal of used equipment and unused medication and for hand decontamination

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Cancer

Guideline Category

Management

Prevention

Treatment

Clinical Specialty

Family Practice

Internal Medicine

Nursing

Oncology

Preventive Medicine

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Health Care Providers

Hospitals

Pharmacists

Physician Assistants

Physicians

Guideline Objective(s)

To provide guidance on processes, technologies and devices for the prevention and control of adverse effects that can happen during or following the administration of systemic treatment to adult cancer patients

Target Population

Adult patients who are going to receive chemotherapy treatment or are already receiving chemotherapy treatment for cancer

Interventions and Practices Considered

1. Development, implementation and monitoring of specific policies and procedures for the safe administration of chemotherapy
2. Selection and management of peripheral and central venous access devices and intra-peritoneal catheters
3. Prevention and detection of complications
 - Continuous monitoring and evaluation
 - Implementation of "care bundles" and standardized protocols
4. Prevention and early detection of infection, occlusion and thrombosis
5. Prevention of extravasation, phlebitis, infiltration, hypersensitivity, flare and allergic reactions
6. Nursing practices before, during and immediately after the administration of systemic cancer treatment, including verification and maintenance of treatment plan
7. Administration with volumetric and elastomeric pumps, including independent checking of calculations
8. Pre and post care
9. Protocols and procedures for the safe handling and disposal of used equipment and unused medication and for hand decontamination

Major Outcomes Considered

- Verification and maintenance of the treatment plan
- Extravasation, phlebitis, flare, allergy and hypersensitivity complications of chemotherapy administration
- Proper dose of chemotherapy (not routinely capped for larger patients)
- Proper dose adjustment of chemotherapy based on adverse events and conditions (e.g., febrile neutropenia, neurotoxicity, nephrotoxicity)
- Safe labeling, and the timing and scheduling of chemotherapy drugs
- Prevention, early detection and management of complications related to the catheter/device use and to the drug administered

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Description of Methods Used to Collect/Select the Evidence

For this document, the results of the general search for guidelines conducted at the start of the two part series was reviewed; a second search was conducted in April 2012 including:

- Canadian Partnership Against Cancer Standards and Guideline Evidence database
- MEDLINE and EMBASE databases (Ovid interface)
- National Guideline Clearinghouse (NGC)
- National Institute for Health and Care Excellence (NICE)
- New Zealand Guidelines Group
- Association for Professionals in Infection Control and Epidemiology Inc. (APIC)
- Association for Vascular Access (AVA)
- Canadian Association of Nurses in Oncology (CANO)
- Centers for Disease Control (CDC)
- Evidence-based Practice in Infection Prevention and Control Canada
- Infusion Nurses Society
- Oncology Nursing Society
- Vascular Access Society
- Joint Commission
- Registered Nurses Association of Ontario (RNAO)
- Scottish Intercollegiate Guideline Network (SIGN)
- BC Cancer Agency
- Alberta Cancer Board
- Accreditation Canada
- EviQ Cancer Treatments Online
- Agency for Healthcare Research and Quality M&M
- Institute of Safe Medication Practices Canada (ISMP Canada)
- Quality Healthcare Network
- Guidelines Advisory Committee
- International Pharmaceutical Federation
- Infectious Diseases Society of America

An untargeted search of the Google® search engine was also conducted with the key words "chemotherapy, extravasation, infections, thrombosis, complications"; the results reported in the first five pages retrieved were examined. The reference lists of included guidelines were scanned for additional references.

Only guidelines published in or after 2006 that were based on a systematic review of the literature and that were relevant to Ontario and to the objectives and the research questions were considered.

Guidelines Selection

See the [Methods document](#) for more information. The Working group organized the selection process of guidelines in two steps.

At step 1, performed by the methodologist, and one clinician, the working group included documents that were:

- Relevant to Ontario
- Specific to their objectives
- Included a systematic review of the evidence
- Published during or after 2006
- Had recommendations about the long-term use of access devices and their complications
- Published in English

The Working Group excluded guidelines that:

- Covered topics already addressed in other existing Cancer Care Ontario guidelines
- Included an exclusively pediatric population
- Covered exclusively temporary central catheters placed in acute care settings

At step 2 of the process, the Working Group examined the guidelines selected and, based on their expertise, decided to exclude those that were:

- Not current
- Clinically not relevant
- Reports of procedure manuals
- Not related to the intravenous or intraperitoneal administration
- Focused on access devices used for hemodialysis, on intensive care unit patients and on the administration of parenteral nutrition

Number of Source Documents

The search of the bibliographic sources generated 96 documents. Fifteen guidelines represented by 16 publications were selected after the two-step process.

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus (Committee)

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Quality Assessment

The quality of the guidelines was measured independently using the Appraisal of Guidelines for Research & Evaluation (AGREE) II tool by Working Group members, the methodologist and one of the Program in Evidence-based Care (PEBC) students in pairs. The Working Group met on August 16, 2012 to discuss the results of the quality assessment, and the results of the Appraisal of Guidelines for Research & Evaluation (AGREE) II evaluation are reported in Appendix 2 of the original guideline document.

Synthesizing the Evidence

For each area of interest, the Working Group used specific, clinically relevant questions to structure this document, including topics of relevance for the recommendations. These questions are presented in Table 1 in the original guideline document with a reference to the guidelines that have been used as the evidence base for the recommendations.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Formation of the Guideline Development Working Group

Cancer Care Ontario's (CCO) Systemic Treatment and Nursing Programs asked the Program in Evidence-based Care (PEBC) to develop a guideline on the safe administration of systemic cancer treatment. In consultation with the Systemic Treatment and Nursing Programs, a Working Group was identified. This Working Group consisted of three registered nurses, two pharmacists, two hematologists, three medical oncologists, and one health research methodologist. The Working Group and the Systemic Treatment and Nursing Programs also formed the Safe Chemotherapy Administration Guideline Development Group. This group would take responsibility for providing feedback on the guideline as it was being developed requiring changes as necessary before approving it.

Aggregate Evidence Quality and Potential for Bias

The Working Group strived to provide guidance for both organizations and clinicians in this very complex and technical area of practice while striving not to make a procedure manual of this guideline. The high quality, evidence-based guidelines forming the backbone of this document were retrieved and selected through a systematic process, and appropriate references and links to them have been provided.

This process was intended to reduce bias, and at the same time to integrate the expertise of the Working Group with the available evidence, in order to produce guidance that is sound and applicable to Ontario.

Values of the Working Group

The Working Group considered the values of patient-centered care and context-specific flexibility in weighing benefits compared to harms, and then made a considered judgement.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Internal Review

Almost all programs in Evidence-based Care (PEBC) documents undergo internal review. This review is conducted by the Expert Panel and the Report Approval Panel. The Working Group was responsible for incorporating the feedback and required changes of both of these panels, and both panels had to approve the document before it could be sent to External Review.

Expert Panel Review and Approval

The members of this group were required to submit conflict of interest declarations prior to reviewing the document. These declarations are described in Appendix 1 of the original guideline document. The document must be approved by formal vote. In order to be approved, 75% of the Safe Chemotherapy Administration Expert Panel membership must cast a vote or abstain, and of those who voted, 75% must approve the document. At the time of the voting, the Safe Chemotherapy Administration Expert Panel members could suggest changes to the document, and possibly make their approval conditional on those changes. In those cases, the Working Group would be responsible for considering the changes, and if those changes could be made without substantially altering the recommendations, the altered draft would not need to be re-submitted for approval again.

The Safe Chemotherapy Expert Panel reviewed the document between August 23, and September 25, 2013. During this review, the Safe

Chemotherapy Expert Panel provided the following key feedback:

- Extend the recommendations to cancer patients in any settings, not exclusively ambulatory hospital.
- Minor changes in the wording of the recommendations and of the text in general to improve clarity and consistency.

In response to this feedback, the Working Group made the following changes:

- The phrase "in a hospital setting" was removed throughout the document.
- Changes in the wording were made to improve clarity and consistency of language.

On September 26 in a teleconference meeting the Safe Chemotherapy Administration Working Group decided together on the changes to be made in response to feedback and formally approved them unanimously.

Report Approval Panel Review and Approval

The purpose of the Report Approval Panel (RAP) review is to ensure the methodological rigor and quality of PEBC documents. The RAP consists of nine clinicians with broad experience in clinical research and guideline development, and the Director of the PEBC. For each document, three RAP members review the document: the Director and two others. RAP members must not have had any involvement in the development of the guideline prior to Internal Review. All three RAP members must approve the document, although they may do so conditionally. If there is a conditional approval, the Working Group is responsible for ensuring the necessary changes are made, with the Assistant Director of Quality and Methods, PEBC, making a final determination that the RAP's concerns have been addressed.

In June 2013 the RAP reviewed this document. The RAP conditionally approved the document in September, 2013. Key issues raised by the Report Approval Panel included the following:

1. Although the document is very well written and well organized, and it is useful, it does not provide specific enough guidance.
2. A change to the core recommendation has been suggested as follows:

To optimize the highest level of professional practice (dictated by professional bodies, such as ONA or Canadian Association of Nurses in Oncology (CANO) to ensure optimal safety of chemotherapy administration, it is recommended:

- That institutions develop, implement and monitor specific policies and procedures for the safe admin of chemotherapy
- That these policies and procedures be developed by DATE
- That development of policies and procedures be considered as a quality indicator for part of Cancer System Quality Index

The Working Group made some changes in the wording of the recommendations to align with RAP suggestions; however, the document was not substantially changed. This was discussed with Dr. Melissa Brouwers, Dr. Sheila McNair and Mr. Hans Messersmith and the RAP agreed with the position of the Working Group.

External Review by Ontario Clinicians and Other Experts

The PEBC external review process is two-pronged and includes a targeted peer review that is intended to obtain direct feedback on the draft report from a small number of specified content experts and a professional consultation that is intended to facilitate dissemination of the final guidance report to Ontario practitioners.

Following approval of the document at Internal Review, the Safe Chemotherapy Administration Expert Panel circulated the draft document with recommendations modified as noted under Internal Review, above, to external review participants for review and feedback. Appendix 2 in the original guideline document summarizes the draft recommendations and supporting evidence developed by the Safe Administration of Chemotherapy Expert Panel as submitted for External Review.

Methods

Targeted Peer Review

During the guideline development process, nine targeted peer reviewers from Ontario considered to be clinical and/or methodological experts on the topic were identified by the working group. Several weeks prior to completion of the draft report, the nominees were contacted by email and asked to serve as reviewers. Three reviewers agreed and the draft report and a questionnaire were sent via email for their review. The questionnaire consisted of items evaluating the methods, results, and interpretive summary used to inform the draft recommendations and whether the draft recommendations should be approved as a guideline. Written comments were invited. The questionnaire and draft document were sent out on November 15, 2013. Follow-up reminders were sent at two weeks (email) and at four weeks (telephone call). The Safe Chemotherapy Administration Expert Panel reviewed the results of the survey.

Feedback was obtained through a brief online survey of health care professionals who are the intended users of the guideline. All oncology nurses, medical oncologists, pharmacists in oncology, radiation oncologists and interventional radiologists in the PEBC database were contacted by email to inform them of the survey. All the participants were from Ontario. Participants were asked to rate the overall quality of the guideline (see Section 1 in the original guideline document) and whether they would use and/or recommend it. Written comments were invited. Participants were contacted by email and directed to the survey website where they were provided with access to the survey, the guideline recommendations (see Section 1 in the original guideline document) and the evidentiary base (see Section 2 in the original guideline document). The notification email was sent on November 15, 2013. The consultation period ended on January 10, 2014. The Safe Chemotherapy Administration Expert Panel reviewed the results of the survey.

Conclusion

This EBS report reflects the integration of feedback obtained through the external review process with final approval given by the Safe Chemotherapy Administration Expert Panel and the Report Approval Panel of the PEBC. Updates of the report will be conducted in accordance with the PEBC Document Assessment and Review Protocol.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The recommendations are supported by a clinical practice guideline and systematic reviews.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Safe administration of systemic cancer therapy

Potential Harms

Not stated

Qualifying Statements

Qualifying Statements

- Special consideration and precautions should be made to the labelling and scheduling of drugs that are to be administered intrathecally. Mistaken intrathecal administration of drugs prepared for intravenous (IV) administration (e.g., bortezomib and vincristine) have resulted in fatal outcomes. A resource for the safe labelling of chemotherapy drugs is in the Cancer Care Ontario (CCO) Evidence-Based Series #12-11 [Patient Safety Issues: Key Components of Chemotherapy Labelling](#) [redacted].
- For more specific details on the selection and use of catheters, the Working Group refers the reader to the source guidelines by Oncology Nursing Society (ONS) (book available for purchase), [Centers for Disease Control and Prevention \(CDC\)](#) [redacted] and [European Oncology Nursing Society \(EONS\)](#) [redacted].
- For more specific details on the prevention, detection and management of complications, the Working Group refers the reader to the source guidelines highlighted in this document. The evidence base for many of the procedures needed in this area has been established, while several topics are still controversial and the evidence evolving.
- Two selected guidelines represented by three publications were relevant for this topic area and applicable to Ontario: the [EONS guideline](#) [redacted] and the ONS guideline. Recommendations regarding patient education and their involvement in the detection and

management of extravasation are from the EONS guidelines and endorsed by the Working Group.

- Factors that have been recognized as causes for variations in the flow rate of elastomeric pumps are:
 - Fluid viscosity
 - Head height
 - Temperature
 - Underfilling
 - Diameter of access device
 - Patient's blood pressure

Additional considerations and explanations and specific recommendations for the practical use of elastomeric pumps are reported in the resources for implementation reported in the box below.

- The root-cause-analysis of the fluorouracil incident that occurred in Alberta in 2006 identified the lack of appropriate documentation and multitasking as contributing factors to the mistaken programming of the pump.
- Care has been taken in the preparation of the information contained in this report. Nonetheless, any person seeking to apply or consult the report is expected to use independent medical judgment in the context of individual clinical circumstances or seek out the supervision of a qualified clinician. CCO makes no representation or guarantees of any kind whatsoever regarding the report content or use or application and disclaims any responsibility for its application or use in any way.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Quick Reference Guides/Physician Guides

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Living with Illness

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Safety

Identifying Information and Availability

Bibliographic Source(s)

Leung M, Bland R, Baldassarre F, Green E, Kaizer L, Hertz S, Craven J, Trudeau M, Boudreau A, Cheung M, Singh S, Kukreti V, Raha R, Safe Administration of Chemotherapy Expert Panel. Safe administration of systemic cancer therapy. Part 2: administration of chemotherapy and management of preventable adverse events. Toronto (ON): Cancer Care Ontario (CCO); 2014 Mar 10. 82 p. (Evidence-based series; no. 12-12-2). [95 references]

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2014 Mar 10

Guideline Developer(s)

Program in Evidence-based Care - State/Local Government Agency [Non-U.S.]

Guideline Developer Comment

The Program in Evidence-based Care (PEBC) is a Province of Ontario initiative sponsored by Cancer Care Ontario and the Ontario Ministry of Health and Long-Term Care.

Source(s) of Funding

The Program in Evidence-based Care (PEBC) is supported by the Ontario Ministry of Health and Long-Term Care through Cancer Care Ontario. All work produced by the PEBC is editorially independent from its funding source.

Guideline Committee

Safe Administration of Chemotherapy Expert Panel

Composition of Group That Authored the Guideline

Authors: M. Leung, R. Bland, F. Baldassarre, E. Green, L. Kaizer, S. Hertz, J. Craven, M. Trudeau, A. Boudreau, M. Cheung, S. Singh, V. Kukreti, R. Raha

Financial Disclosures/Conflicts of Interest

In accordance with the Program in Evidence-based Care (PEBC) Conflict of Interest (COI) Policy, the guideline authors, Safe Chemotherapy Administration Expert Panel members, and internal and external reviewers were asked to disclose potential conflicts of interest.

For the Working Group members, 10 members declared they had no conflicts of interest, and two (SS and RB) declared conflicts. SS declared to have received more than \$5,000 in a single year from Novartis, and RB declared to work for Innomax Strategies Inc. since 2012.

For the Safe Chemotherapy Administration Expert Panel, nine members declared they had no conflicts of interest, and three (VB, KJ and GK) declared conflicts. VB declared to be co-investigator on a study of IV chemotherapy and to have received funding from Cancer Agencies; declared to be Director of Pharmacy Services and Provincial Oncology Drug Program for Cancercare Manitoba. KJ declared to be co-

investigator for study (Improving the Safety of Ambulatory Intravenous Chemotherapy in Canada) funded by CPSI, CAPCA, ISMP and five provincial cancer agencies (2008-2010). GK declared to have received travel and conference support greater than \$5,000 to attend a meeting in 2012.

The COI declared above did not disqualify any individuals from performing their designated role in the development of this guideline, in accordance with the PEBC COI Policy.

To obtain a copy of the policy, please contact the PEBC office by email at ccopgi.mcmaster.ca.

Guideline Status

This is the current release of the guideline.

The EVIDENCE-BASED SERIES report, initially the full original Guideline, over time will expand to contain new information emerging from reviewing and updating activities.

Please visit the [Cancer Care Ontario Web site](#) for details on any new evidence that has emerged and implications to the guidelines.

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the [Cancer Care Ontario Web site](#) .

Availability of Companion Documents

The following are available:

- Safe administration of systemic cancer therapy. Part 2: administration of chemotherapy and management of preventable adverse events. Summary. Toronto (ON): Cancer Care Ontario; 2014 Mar 10. 22 p. Electronic copies: Available in Portable Document Format (PDF) from the [Cancer Care Ontario \(CCO\) Web site](#) .
- Program in evidence-based care handbook. Toronto (ON): Cancer Care Ontario (CCO); 2012. 14 p. Electronic copies: Available in PDF from the [CCO Web site](#) .

In addition, Appendix 1A in the [original guideline document](#) includes a compendium of examples of procedures relevant to chemotherapy administration.

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on June 2, 2014.

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